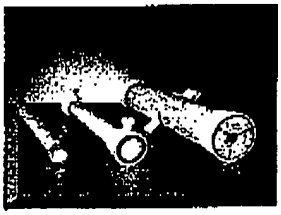
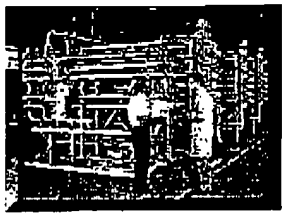
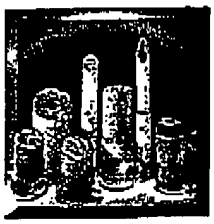
KOCH
KOCH MEMBRANE SYSTEMS INC
Pure, Clean Drinking Water - And More of it

Koch Membrane Systems


Koch Membrane Systems, Inc. was established as a privately held company under the name "ABCOR" in 1963, to develop and commercialize processes and equipment based on separation and purification technologies. These new technologies, like many others, originated with scientists from the Massachusetts Institute of Technology. In 1970 semi-permeable membranes were added to the portfolio of separation technologies offered. The membranes proved to be so successful that all the other separation technologies were abandoned. Since then the company has concentrated entirely on the membrane separation field.

Municipal Water Filtration Systems

Everyday millions of gallons of water are filtered all over the world by Koch Membrane Systems, providing safe drinking water to the highest standards.
The professional team backing these systems comprises not only the membrane expertise you would expect from the world's strongest membrane company but also a dedicated team of water treatment specialists many with experience of working in water utilities.

Industrial Water and Wastewater

Industrial customers can utilize Koch
Membrane Systems' ultrafiltration technology combined with reverse osmosis to exceed the most stringent regulatory requirements while at the same time reducing the rate of water intake to the plant. There is no other available technology that can leap-frog environmental requirements while reducing the operating costs of waste disposal, energy consumption, and chemical expenses. This zero discharge

water recycle approach offers the ultimate waste treatment solution, and does so at the lowest overall cost.

Potable Water Desalination

Koch Membrane Systems is a world leader at applying reverse osmosis and nanofiltration membranes to the production of potable water from seawater and brackish water. From the time Koch Membrane Systems first patented the spiral wound element in the mid 1960's through the introduction of the first thin film composite TFC® membrane in the mid 1970's, Koch Membrane Systems has provided the most cost effective, high technology membranes and systems for producing drinking water.

Koch Membrane Systems' 35 years of experience is available to assist municipalities, governments, and engineering firms in the optimum application of membranes for potable water production. Koch Membrane Systems has designed, constructed and operated some of the landmark desalination systems in the world. Key installations include the first large seawater system (12,000 cubic meters per day) installed for Saline Water Conversion Corp. in Jeddah, Saudi Arabia in 1978, and the Umm Lujj plant installed in 1985. Koch Membrane Systems also built the 5 MGD system at Water Factory 21 for Orange County Water District in 1977. Koch Membrane Systems received the award to be the primary membrane supplier and delivered over 51 MGD of membrane capacity for the Yuma Desalting Project.

Pharmaceutical and Biotechnology

Koch Membrane Systems membranes are used in commercial installations in the following applications:

- Concentration of antibiotics, pharmaceutical intermediates, and peptides in aqueous solutions which also contain organic solvents such as methanol, ethanol, acetone, acetonitrile, and other organic solvents.
- Recovery of organic solvent eluent of preparative scale HPLC (reverse phase and normal phase) and concentration of the main fraction
- Recovery of caustic soda from CIP and fermentation

applications.

Wine and Juice Processing:

Juice Processing

Koch Membrane Systems' SUPER-COR® membrane produces a brilliantly clear juice with virtually no suspended solids, colloidal haze particles, microorganisms or undesirable protein matter. Since the ultrafiltration membrane process maintains a physical barrier between feed and juice products, natural variations in feed solids do not affect filtrate quality. SUPER-COR® filtration systems are ideal for processing a wide variety of light and dark juices including apple, pineapple, pear and cherry. By selecting the appropriate membrane, they also permit color passage for grape, cranberry and other darker juices while still producing a crystal clear product.

SUPER-COR® ultrafiltration and microfiltration systems produce a significantly increased yield of higher quality juice with less maintenance than conventional filtration methods. The results are... more juice per bushel and higher profits per gallon. Over 75% of juice products filtered using membranes are filtered using Koch Membrane Systems' SUPER-COR® membranes.

Wine Clarification

With nearly 1000 systems installed, Koch Membrane Systems has pioneered the use of membranes in the wine industry. Our worldwide network of wine processing experts work side by side with winemakers to develop the optimum wine clarification system. As winemakers know, the smallest change in the wine making process can cause dramatic differences in the finished product. Koch Membrane Systems' wine specialists work with the wine maker to understand the products needs and then determine which one of our wine cross flow filtration systems and membranes are best suited for the wine.

As pioneers in the Wine Industry, we at Koch Membrane Systems have learned that there isn't a "one size fits all" solution for wine clarification. It is important to understand the character of the wine before making any changes to the process. Working together, we can improve the organoleptic and aesthetic characteristics of the final product.

Dairy Processing

Koch Membrane

For more than 30 years, Koch Membrane Systems has led the industry in developing ultrafiltration systems and membranes for dairy applications. With our new capabilities in reverse osmosis and nanofiltration, you can expect the same world class performance. We add value by supplying high quality membrane products that deliver peak performance and by sharing our experience in state-of-the-art design of dairy membrane filtration systems worldwide.

Koch Membrane Systems has an experienced staff of professionals available around the globe to assist customers in the optimization of existing systems and support with the development of new applications. We have an ongoing R&D program evaluating unique membranes and components to ensure the availability of state-of-the-art products. Koch Membrane Systems' Process Technology and Technical Service Departments will provide you with expert technical assistance whether it is staff training, a thorough review of current operations, or recommendations for optimizing your system.

Other Product Applications and Services

Koch Membrane Systems' products and services are utilized in a variety of other applications, including; paper, sweetener, electric utilities, microelectronics, bottling, electrocoat paint, catalyst recovery, food and other specialty applications.

Additionally, Koch Membrane Systems offers onsite services and KOCHKLEEN® chemicals that ensure the longevity and performance of your installation.

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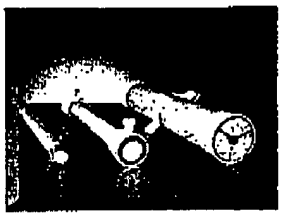
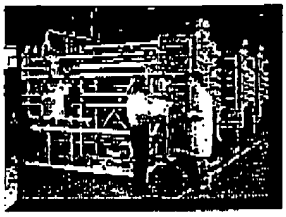
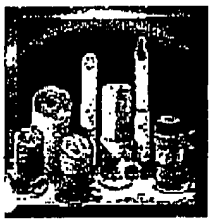


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